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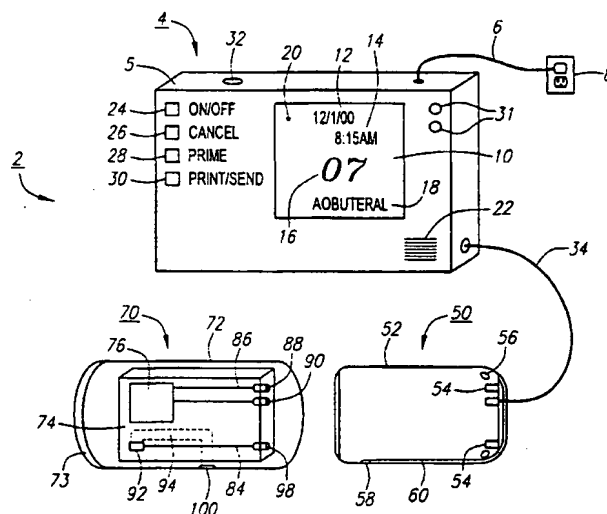
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29 August 2002(72) Inventor: **STENZLER, Alex**; 204-2 North Singingwood
Street, Orange, CA 92869 (US).For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: PULMONARY DRUG DELIVERY DEVICE



(57) Abstract: A nebulizer (2) for delivering a drug to a patient includes an electronic control unit (4), a hand piece (50) connected to the electronic control unit via a cable (34), and a cartridge (70) detachably engaged with the hand piece. The electronic control unit includes a controller, a cartridge reader, a dosage storage element, and a display (10). The display preferably displays the drug name (18) and the number of dosages remaining (16) in the cartridge. The cartridge includes a head or nebulizer element (100) for creating a fine mist or cloud of the drug in droplet form. The cartridge also includes a storage container (74) containing a drug and a pump (92) for pumping the drug to the nebulizer element. The cartridge also contains an information storage element (76) for containing information regarding the drug and the drug delivery protocol for the patient. The information in the information storage element is transmitted to the electronic control unit when the cartridge is engaged with the hand piece.

WO 02/017988 A3

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER																						
IPC(7) : A61M 11/00, 15/00, 16/00, 16/10; A62B 7/00; F16K 31/02																						
US CL : 128/200.14, 200.16, 200.22, 203.12, 204.21, 204.23																						
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B. FIELDS SEARCHED																						
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)																						
NONE																						
C. DOCUMENTS CONSIDERED TO BE RELEVANT																						
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																				
Y	US 5,363,842 A (MISHELEVICH ET AL.) 15 NOVEMBER 1994, SEE COL.6, LINES 30-45, 62-64.	1,5,6,8-18,20-24,27																				
Y	US 5,404,871 A (GOODMAN ET AL.) 11 APRIL 1995, SEE COL.16, LINES 4-23.	1,5,6,8-18,20-24,25,26,27,28-30																				
Y	US 4,984,158 A (HILLSMAN) 08 JANUARY 1991, SEE FIG.1.	1,5,6,8-18,20-24																				
Y	US 5,950,619 A (VAN DER LINDEN ET AL.) 14 SEPTEMBER 1999, SEE COL.3, LINES 10-25.	1,5,6,8-18,20-24,25,26,27,28-30																				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																						
* Special categories of cited documents: <table border="0"> <tr> <td>"A"</td> <td>document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T"</td> <td>later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E"</td> <td>earlier document published on or after the international filing date</td> <td>"X"</td> <td>document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L"</td> <td>document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y"</td> <td>document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O"</td> <td>document referring to an oral disclosure, use, exhibition or other means</td> <td>"&"</td> <td>document member of the same patent family</td> </tr> <tr> <td>"P"</td> <td>document published prior to the international filing date but later than the priority date claimed</td> <td></td> <td></td> </tr> </table>			"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E"	earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family	"P"	document published prior to the international filing date but later than the priority date claimed		
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INTERNATIONAL SEARCH REPORT

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y <u>X</u>	US 5,392,768 A (JOHANSSON ET AL.) 28 FEBRUARY 1995, SEE COL. 25, LINES 36-48.	2-4,7,19 <u>31</u>